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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,981	11/25/2003	Tadashi Yano	10407-70US (A3084MT-US1)	6950
570	7590	11/16/2004	EXAMINER BAUMEISTER, BRADLEY W	
AKIN GUMP STRAUSS HAUER & FELD L.L.P. ONE COMMERCE SQUARE 2005 MARKET STREET, SUITE 2200 PHILADELPHIA, PA 19103-7013			ART UNIT 2815	PAPER NUMBER

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/721,981	Applicant(s) YANO ET AL.	
	Examiner B. William Baumeister	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/25/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - a. Paragraph [0006]: “the LED chip 21 is red [sic: blue]...”
 - b. Paragraph [0056] first states that the rendering index of the LED lamp is increased (line 6 of the paragraph) but subsequently states that it is decreased (last line).
Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komoto et al. '824 in view of Applicant's prior art admissions.

- a. Komoto discloses many embodiments for LEDs that are coated with wavelength converting phosphors. The LED, itself may emit primary wavelengths of UV or blue (i.e., peak wavelength within 400-490 nm) (see e.g., col. 15, lines 33-48). Komoto also disclose that the LED and phosphor wavelength converting means may be covered by an optional color filter (e.g., element 544, FIGs 10C, 23A, 60, 72, 84, etc.; or element 692, FIGs. 13B, 25, 34A-C, 62, 74, 86, etc...). Komoto also discloses a different, optional

Art Unit: 2815

absorbing layers 2140 for absorbing only the primary light (e.g., col. 41, lines 58-), indicating that the color filter is alternatively for filtering the secondary or ultimately blended wavelengths. The absorbing layer may be formed as a separate layer, similar in manner to the color filter layer (see e.g., FIG 117, element AB), or alternatively be integrated into one of the resin layers (see e.g., FIGs. 103-123).

b. Komoto does not anticipate the claims because it does not teach that the color filter employed may specifically filter wavelengths in the 550-605 nm range.

c. Applicant acknowledges that it was known to provide blue-emitting LEDs with phosphor wavelength converting portions for emitting white light, but that the color rendering index was not optimized. Applicant also acknowledges that JP 5-290818 was prior art (see e.g., specification, paragraph [0056] . Therein, Nd₂O₃ phosphors are provided for filtering white-light sources to decrease the transmittance of the yellow wavelengths (e.g., 570-590 nm), and thereby increase the white light's color rendering index (or purity). The white-light sources of the JP '818 reference were specifically incandescent light bulbs. JP '818 does not disclose—and therefore Applicant does not admit—that the Nd₂O₃ phosphors may be employed in conjunction with LED/phosphor light sources.

d. It would have been obvious to one of ordinary skill in the art at the time of the invention to have specifically employed Nd₂O₃ as a material for Komoto's color filter in any of the embodiments disclosed therein for emitting white light (e.g., col. 15, line 63). the skilled artisan would have been so motivated because white-emitting LED/phosphors were conventionally known (both Komoto and applicant's prior art admissions); color

Art Unit: 2815

purity was a known consideration for illumination applications (e.g., applicant's prior art admissions; e.g. Komoto, col. 42, line 10; and JP '818, ABSTRACT); Nd₂O₃ was a phosphor, conventionally known to have a strong absorption cross-section for —or reduce transmittance of—yellow wavelengths (JP '818); and it was known that Nd₂O₃ could be used to partially absorb yellow wavelengths of white light to increase or alter the color purity of white light (e.g., JP '818).

e. Regarding claim 11, regardless of whether Komoto further expressly discloses that the color filter material may be blended in same resin with the secondary light-emitting phosphors, it would have been obvious to one of ordinary skill in the art at the time of the invention to have done so. First, Komoto discloses that multiple phosphors may be blended in the same resin (such as those for emitting R, G and B). Second, Komoto discloses at least that the absorbing or reflecting materials may be formed within a resin layer. as such, it would have been obvious to have incorporated the wavelength converting phosphors and the Nd₂O₃ yellow-filtering phosphor within the same resin for the purpose of reducing the number of required manufacturing steps and thereby reduce the associated costs, a well-known industry goal.

f. Regarding claim 15, the spectral transmittance is a conventionally-known result-effective variable, and therefore setting the transmittance to be within this very broad range constitutes an obvious optimization. See MPEP 2144.05.II.

g. Regarding claim 17, any LED substrate may be deemed to possess "a card shape," and the rest of the claim language is directed towards an intended use which every LED

Art Unit: 2815

inherently satisfies in that an LED only operates as intended when it is connected to an electrical or "lighting" circuit.

4. Claims 1-17 are alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over Komoto '824 as applied to the claims above, and further in view of JP '818 as applied to the claims above.

In the event that applicant asserts that the discussion in the background section of the specification does not constitute an admission that either (1) JP '818 constitutes prior art, or (2) that the issue of color purity for LEDs, in particular, was known, the claims would nonetheless be obvious for the reasons set forth above. JP '818 and Komoto '824 teach both of these facts, regardless of whether applicant's specification should be determined to constitute admissions of such facts.

Contact Information

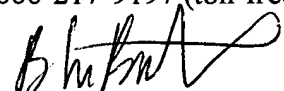
Any inquiry concerning this communication or earlier communications from the examiner should be directed to B. William Baumeister whose telephone number is (571) 272-1722. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2815

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BRADLEY BAUMEISTER
PRIMARY EXAMINER



B. William Baumeister
Primary Examiner
Art Unit 2815

November 13, 2004